Listing of the Claims:

A listing of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Original) A primary color identification system for measuring color chromaticity coordinates of a plurality of red, green and blue light emitting diodes (LEDs) that generate a combined light, said system comprising:

a filter located near said LEDs, so as to receive said combined light generated by said red, green and blue LEDs;

said filter configured to provide signals corresponding to light received from each of said red, green and blue LEDs;

said signals provided by said filter enabling measurement of chromaticity coordinates of said combined light;

a processor coupled to said filter and configured to receive said signals provided by said filter;

said processor further configured to generate control signals associated with each one of said plurality of red, green and blue LEDs, such that a desired light intensity from each of said LEDs is provided;

a driver circuit coupled to said processor to receive said control signals, said driver circuit further coupled to said plurality of red, green and blue LEDs and configured to provide drive signals enabling said LEDs to produce said desired light intensity.

2. (Currently amended) The system in accordance with claim

1, wherein

said processor ~~generates~~ estimates a plurality of test control signal sets, so that said LEDs produce a plurality of desired light intensity values in a sequential order; and

said processor configured to calculate the chromaticity coordinates of each of said red, green and blue LED light sources in accordance with said chromaticity coordinates of said combined light associated with each of said set of test control signals.

3. (Original) The system in accordance with claim 2, wherein said processor generates at least three sets of control signals, so that said LEDs, produce at least three desired light intensity values in said sequential order.

4. (Original) The system in accordance with claim 2 further comprising means to measure light intensity values corresponding to each one of said red, green and blue LEDs so as to generate a combined light having a desired color chromaticity coordinate.

5. (Original) The system in accordance with claim 4, further comprising a feedback control circuit configured to track and maintain said light intensity values that generate a combined light having said desired color chromaticity coordinate.

6. (Original) The system in accordance with claim 2, wherein said color chromaticity coordinates of each one of said red, green and blue LEDs is calculated based on

$$\begin{pmatrix} \frac{x_R}{y_R} & \frac{x_G}{y_G} & \frac{x_B}{y_B} \\ \frac{1}{y_R} & \frac{1}{y_G} & \frac{1}{y_B} \end{pmatrix} = \begin{pmatrix} \frac{x_{w1}}{y_{w1}} & \frac{x_{w2}}{y_{w2}} & \frac{x_{w3}}{y_{w3}} \\ \frac{1}{y_{w1}} & \frac{1}{y_{w2}} & \frac{1}{y_{w3}} \end{pmatrix} * \begin{pmatrix} I_{w1} & 0 & 0 \\ 0 & I_{w2} & 0 \\ 0 & 0 & I_{w3} \end{pmatrix} * \begin{pmatrix} I_{R1} & I_{R2} & I_{R3} \\ I_{G1} & I_{G2} & I_{G3} \\ I_{B1} & I_{B2} & I_{B3} \end{pmatrix}^{-1}$$

wherein x and y are color coordinates of each of said red, green, blue and combined light respectively in accordance with said test control signals, and I is the intensity value of each of said LEDs, and said combined light respectively, in accordance with said test control signals.

7. (Original) The system in accordance with claim 6 wherein said measurement of said color chromaticity coordinates is handled under the condition that the matrix

$$\begin{pmatrix} I_{R1} & I_{R2} & I_{R3} \\ I_{G1} & I_{G2} & I_{G3} \\ I_{B1} & I_{B2} & I_{B3} \end{pmatrix}$$

is nonsingular.

8. (Original) The system in accordance with claim 1, wherein said filter is a tristimulus filter.

9. (Currently amended) A method for identifying color chromaticity coordinates of a plurality of red, green and blue light sources that together generate a combined light, said method comprising the steps of:

a) setting the intensity of each of said red, green and blue light sources at a specified test level;

b) measuring the color chromaticity coordinates of the combined light;

c) repeating steps (a) and (b) so as to measure a plurality of color chromaticity coordinates of said combined light, wherein each of said chromaticity coordinates of said combined light correspond to a different set of test intensity levels for each of the red, green and blue light sources;

d) measuring primary color chromaticity coordinates of each of the red, green and blue light sources.

10. (Original) The method in accordance with claim 9, wherein said step of measuring the color chromaticity coordinates of said combined light further comprises the step of:

providing a tristimulus filter near said combined light; and

calculating said color chromaticity coordinates of said combined light in accordance with signals provided by said tristimulus filter.

11. (Original) The method in accordance with claim 9, further comprising the step of estimating light intensity values necessary to obtain said combined light with a desired chromaticity coordinates in accordance with said measured light chromaticity coordinates of each of said red, green and blue light sources.

12. (Original) The method in accordance with claim 11, further comprising the step of maintaining said estimated light intensity values for each of said red, green and blue light sources by employing a feedback arrangement.

13. (Original) The method in accordance with claim 11 further comprising the step of measuring said color chromaticity coordinates of said combined light in accordance with

$$x_w = \frac{X_w}{X_w + Y_w + Z_w} \qquad \text{and}$$

$$y_w = \frac{Y_w}{X_w + Y_w + Z_w}$$

wherein *X*, *Y* and *Z* are output signals provided by said filter.

14. (Original) The method in accordance with claim 13, further comprising the step of measuring said color coordinates of each one of said red, green and blue light sources in accordance with

$$\begin{pmatrix} \frac{x_R}{y_R} & \frac{x_G}{y_G} & \frac{x_B}{y_B} \\ \frac{1}{y_R} & \frac{1}{y_G} & \frac{1}{y_B} \end{pmatrix} = \begin{pmatrix} \frac{x_{w1}}{y_{w1}} & \frac{x_{w2}}{y_{w2}} & \frac{x_{w3}}{y_{w3}} \\ \frac{1}{y_{w1}} & \frac{1}{y_{w2}} & \frac{1}{y_{w3}} \end{pmatrix} * \begin{pmatrix} I_{w1} & 0 & 0 \\ 0 & I_{w2} & 0 \\ 0 & 0 & I_{w3} \end{pmatrix} * \begin{pmatrix} I_{R1} & I_{R2} & I_{R3} \\ I_{G1} & I_{G2} & I_{G3} \\ I_{B1} & I_{B2} & I_{B3} \end{pmatrix}^{-1}$$

wherein *X* and *Y* are color coordinates of each of said red, green, blue and combined light respectively in accordance with said test control signals, and *I* is the intensity value of each of said LEDs, and said combined light respectively, in accordance with said test control signals.